

ABSTRACT OF THE DISCLOSURE

The invention provides a semiconductor device having a pn diode that includes a p-type SiGe layer and a n-type Si layer junctioned to the p-type SiGe layer. A built-in potential of the pn diode can be reduced, and thus obtaining a diode characteristics with lower impedance compared to the conventional scheme. Further, by forming a bridge-rectifier circuit with the pn diode or the like, alternating-current voltages can efficiently be converted into direct-current voltages. Accordingly, the invention provides a semiconductor device and method of manufacturing the same that can flow a larger electrical current in the forward direction of a diode by improving the voltage-current characteristics of the diode.